Rapport d'Audit

Mode de compatibilité

IEEE ISET BIZERTE STUDENT BRANCH

CONTENTS

CHAPTER 1: PRELIMINARY ENERGY AUDIT

Evaluating the performance of a thermal power plant requires an overall energy analysis to determine its overall efficiency and a detailed energy analysis to determine the efficiencies of its various components.

This chapter is a preliminary audit which focuses on the collection of data necessary for the overall energy audit.

1.1 Objectives and method of preliminary energy audit

The objective of the mission is to support the company in carrying out a preliminary audit bringing together all the data collected, the investigations carried out and the proposed action plan. This objective is part of a more global goal of improving the company's energy performance.

The preliminary audit was carried out in accordance with the terms of reference and the specifications of the energy audit of the industrial sector established by ANME.

1.2 Preliminary Energy audit

1.2.1 Description of the industrial installation: CTE Thermoelectric Power Plant

STIR - as already specified - is the only refinery which includes the following units:

- A TOPPING unit whose basic process is atmospheric distillation
- A PLATFORMING unit which is based on the catalytic reforming process
- An LPG chemical treatment unit
- A thermoelectric power plant to meet the energy needs of the refinery (water, steam, electricity, air)
- A local laboratory
- A product storage park
- An oil port equipped with two loading stations [1]

The plant produces electrical energy from fuel oil and gas. The STIR, as already mentioned, has two sources of electrical energy:

- STEG Network
- CTE plant (Self-production)

Figure 1: Boundary of the STIR and location of the CTE

Energy production processes

With a particular interest in self-production, CTE boilers are natural circulation water tube boilers which produce high pressure steam from drinking water devoid of dissolved gaseous mineral substances, in order to avoid undesirable phenomenal feared such as corrosion, scaling and priming and guarantee the quality of the steam produced.

The CH101 boiler consumes fuel oil and fuel gas as fuels. However, the CH202 boiler only uses fuel oil.

In order to improve combustion and transform the fuel into fine droplets, it is injected in parallel with the fuel, a flow of atomization steam which is a medium pressure steam with a temperature of 260°C and a pressure of 12 bars. The air necessary for combustion is taken from the outside and blown towards the hearth by a turbo fan.

The production of steam at the CTE is done as follows: The demineralized water rich in dissolved gas, stored in the S83 tank with the condensate returns coming from the condenser of the TG2 group and the equipment, is returned to the degasser via three food pumps to deplete it of gases and oxygen by injecting degassing and eliminox steam before feeding the boilers.

The degassed water is subsequently transported to the boilers via four pumps. This water circulates inside the tubes of the CH101 boiler passing through the upper tank and enters the tubes of the CH202 boiler through the upper tank passing through a preheater followed by a water heater economizer.

The combustion produced in the combustion chamber of each of two boilers releases a quantity of heat which heats and vaporizes the water which circulates in the tubes lining the walls of this chamber.

The wet saturated steam generated is sent and collected in the upper tank which in turn allows the steam to be separated from the liquid, the excess water is returned to the lower tank by drop tubes not subject to heat and the saturated steam dry which does not contain droplets of liquid water leaves the tank, passes through the boiler superheaters and is transformed into superheated steam at high pressure of around 42 bars and a temperature of around 400°C.

The high pressure steam produced by the two boilers is sent to the parallel collector, where it is subdivided to satisfy the needs of the other equipment.

At this collector, high pressure steam is sent to the two turbogenerators TG1 and TG2 to produce electricity. A portion is also transported to the TK1 turbocharger of the PLATFORMING unit.

The medium pressure steam, used by the turbopumps of the production unit, is obtained either by the discharge of steam from TG1 or by a reduction station (42/12) which converts the high pressure steam to medium steam. pressure with a temperature of approximately 260°C and a pressure of 12 bars.

Low pressure steam with a temperature of approximately 170°C and a pressure of 5 bars, used for stripping and heating lines and tanks, is obtained either by the reduction station (12/5) which allows convert medium pressure steam into low pressure steam or by the discharge of certain turbopumps operating with medium pressure steam.

The following figure schematizes the process of producing superheated steam in the CTE of the STIR.

As for the production of electricity, the high-pressure steam coming from the parallel collector turns the turbines which subsequently drive the alternators to which they are coupled. Thanks to the energy provided by the turbines, the alternators of groups TG1 and TG2 produce alternating electric current.

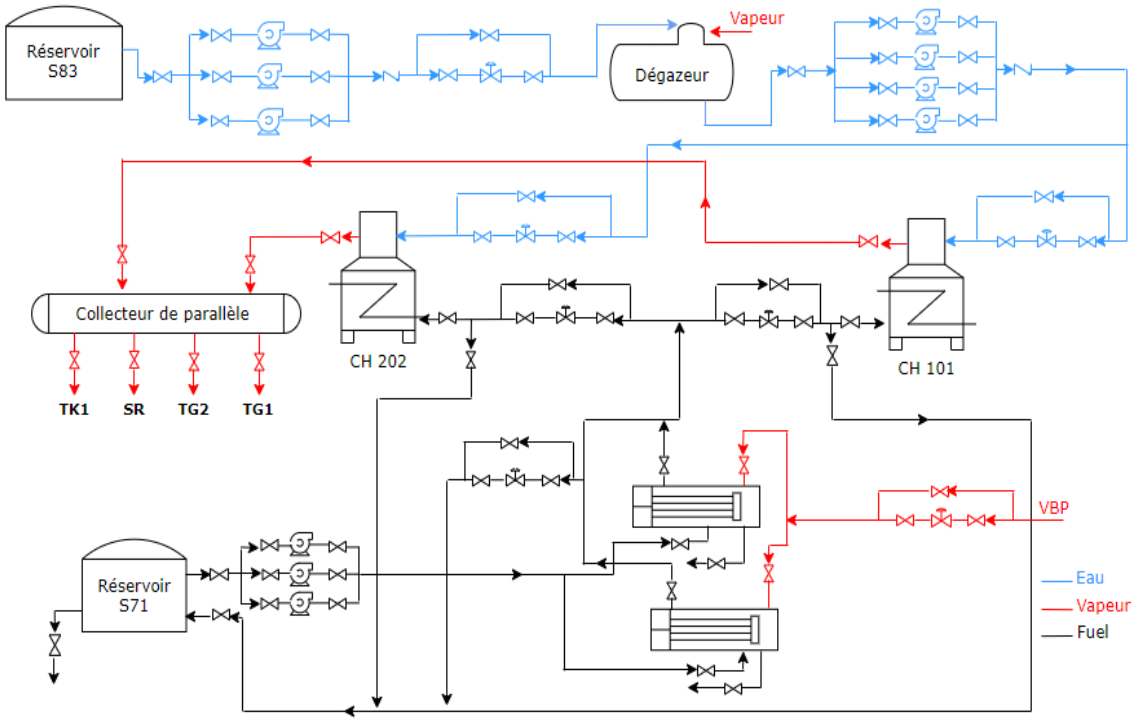

Figure2: Process for producing superheated steam

Turbines can operate by evacuating the steam output to the atmosphere, which then results in significant energy loss. It is for this reason that a device is installed at the exhaust of each turbine. That of the first turbine is a parallel collector which ensures the recovery of medium pressure steam and the second is a condenser which allows the steam to be recovered in liquid form to be stored and then sent back to the steam generator, in a closed circuit. .

Transformers are used to modify the voltage of the electric current produced by the alternators and subsequently ensure its transport in the lines.

In fact, the medium voltage electrical energy, produced by the CTE transformers, supplies the various equipment of the production units and the power plant and the various pumps in the pump room and the low voltage electrical energy, produced by the transformers of the pump room, the transformers of the production units and the other transformers of the power plant, provides lighting and power supply to various other equipment.

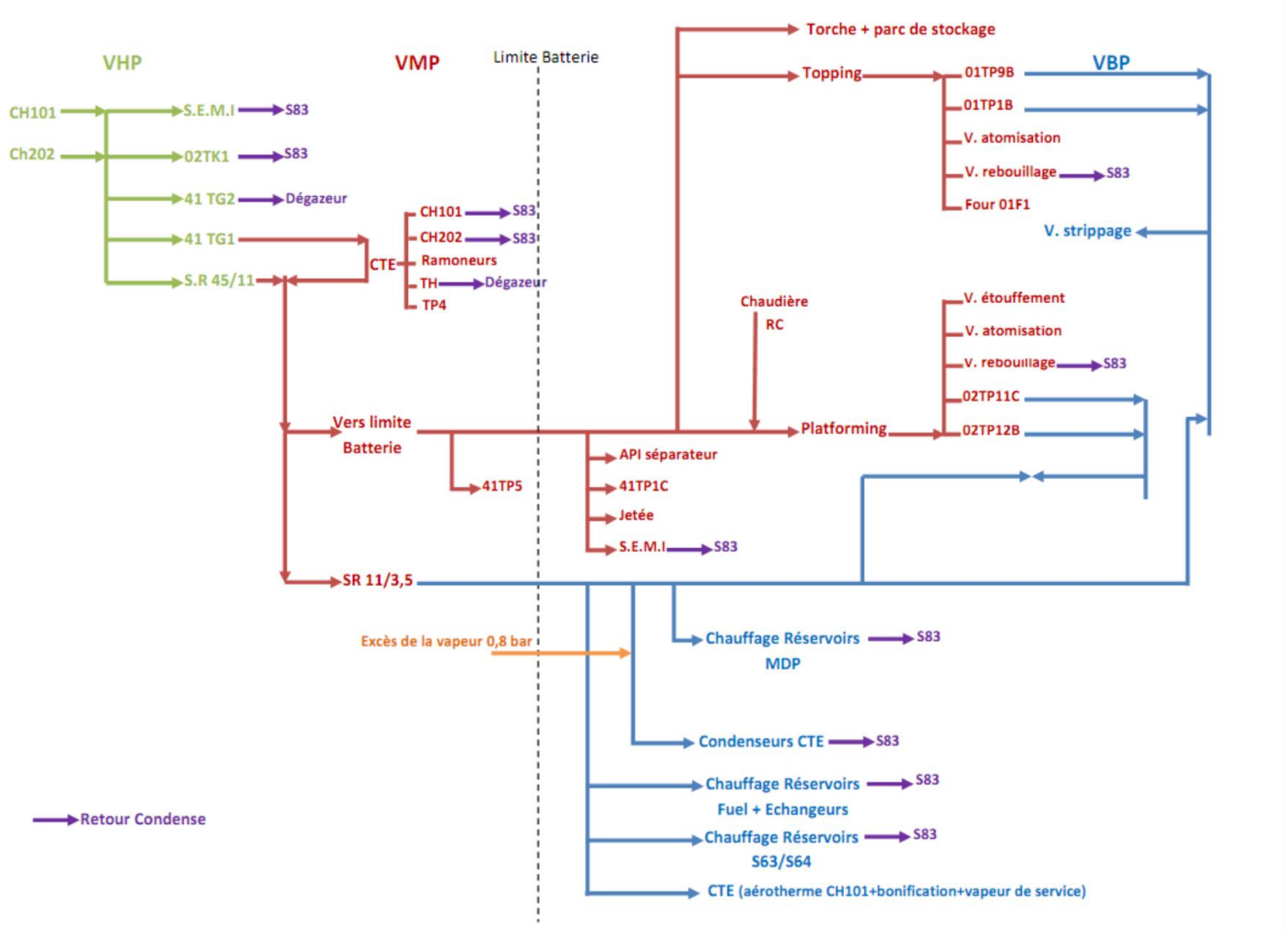

Figure3: Detailed steam distribution diagram

1.2.2 Preliminary diagnoses : Data collection

Data collection is an important step in an overall energy audit, more precisely, the main step of the initial diagnosis before any calculation. The first data collected is taken from the control room, where there are screens reflecting the state of the boilers, turbo-alternators, their characteristic parameters and instantaneous production and consumption, etc.

The control room is part of the CTE and provides digital control of the plant's central plant.

A series of measurements and assessments were carried out with a view to managing the energy performance of the plant more effectively.

STIR needs to know how energy is used and the quantity of energy produced and consumed over time.

A first work will then consist of recording the values of specific parameters linked to boilers and turbogenerators then the consumption and production indicators of these same installations for a period spanning 10 days from March 8, 2022 to March 18, 2022. .

Measurements are taken at 10 a.m.

The tables given on the following pages represent the measurement table models.

The duly completed tables with the values measured according to the specified date are grouped together in the technical file.

Measurement tables

The measurement tables to be completed will concern:

- Characteristic parameters of boilers.
- Boiler totalizers.
- Steam consumption
- Electricity production.
- Electricity consumption.

Table of boiler characteristic parameters

In this table, the characteristic parameters of the boiler are taken directly from the control room, since the CH202 boiler is more recent, it is equipped with a specific screen which displays all its data, while several displays are linked to the ancient, and each represents a characteristic parameter.

Figure4: Displays relating to CH202 and CH101

Painting1: Typical table of characteristic parameters of CH101 & CH202 boilers

	CH101	CH202
Steam flow (Kg/h)		
Water flow (Kg/h)		
Boiler level		
Fuel flow (Kg/h)		
Fuel temperature ()C)		
Gas flow (Kg/h)		
Combustion air flow (Kg/h)		
Steam pressure (Bar)		
Steam temperature (°C)		

Noticed: The boiler level unit in CH101 is % while CH202 is mm H20.

Boiler totalizer table

This totalizer is a steam production and water, fuel oil and gas consumption meter linked to CH101 and CH202 boilers, which makes it possible to better monitor and manage daily consumption and production. The counting operation is carried out every day, the parameters measured each day are in fact automatically added to the parameters of the last day.

Figure5: CH202 totalizer display

Painting2: Typical boiler totalizer table

	Totalizers (Kg)	
	CH101	**CH202**
Steam		
Water		
Fuel		
Gas		

Steam consumption table

The table below summarizes the instantaneous consumption of the three types of steam by the different units. Reading the values is done by directly reading the screen in the control room.

Figure6: Steam consumption display CH101

Painting3: Typical steam consumption table

Steam consumption (Kg/h)	
HPV (TG1)	
HPV (TG2)	
VHP Platforming	
VBP	
VHP reduction station	
VHP sea water	
VMP	

Electricity production table

Once steam is produced in the ETC, part of the VHP is automatically sent to the turbogenerators to produce electricity. The table below groups the production values are taken directly from the electrical monitoring area of the control room. The latter are the results of the daily counting at levels TG1, TG2 without forgetting the external STEG network.

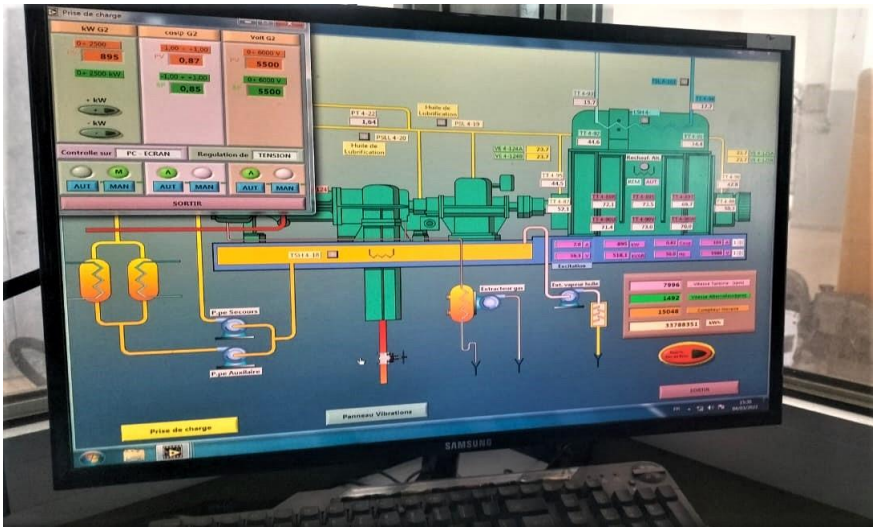

Figure7: Display of TG1 and TG2 electricity production

Painting4: Typical electricity production table

Production (counter in KWh)			
TG1	**TG2**	**STEG**	
		Transformer 1	**Transformer 2**

Electricity consumption table

The table below presents the electricity consumption meter, which works almost on the same principle as production, whether it comes from self-production or from the external STEG network. Measurements are carried out in the electrical monitoring area of the control room.

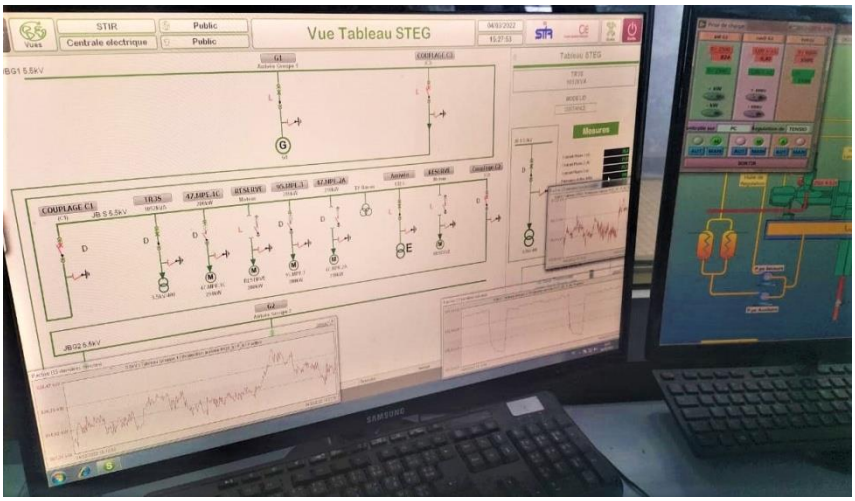

Figure8: Display of electricity consumption TG1 and TG2

Painting5: Typical electricity consumption table

Consumption (counter in KWh)						
TG1			**TG2**			**STEG**
TR1A	**TR2A**	**95 MPE 1**	**TR1B**	**TR2B**	**01 MPE 1A**	**R3S**

Material balances

A daily report is completed based on the measurements established to help document previous data (the daily value tables)

See figure 12 page 28.

VHP assessment: from to ..

		VHP		Total (tons)
		CH101	**CH202**	
Production	Quantity produced (tons)			
	Progressive (tons) to ../../….			
	Average hourly flow (t/h)			
	Number of hours of service (hours)			
	Progressive (hours) to ../../….			

		VHP					Total (tons)
		TG I	**TG II**	**SR VHP - VMP**	**02 TK1**	**EMI Station**	
Consumption	Quantity Consumed (tons)						
	Average hourly flow (t/h)						
	Progressive (tons) to ../../….						

VMP assessment:from to ..

		VMP			Total (tons)
		TG I	**SR VHP - VMP**	**RC boiler**	
Production	Quantity produced (tons)				
	Average hourly flow (t/h)				
	Progressive**(**tonnes) to ../../….				

		VMP				Total (tons)
		SR VMP - VBP	CTE	Topping+ LPG treatment	R.C.	
Consumption	Quantity Consumed (tons)					
	Average hourly flow (t/h)					
	Progressive (tons) to ../../….					

VBP assessment : from to ..

		VBP			Total (tons)
		SR VMP-VBP	Topping Turbines	RC turbines	
Production	Quantity produced (tons)				
	Average hourly flow (t/h)				
	Progressive (tons) to ../../….				

		VBP					Total (tons)
		CTE	CDM	Topping + line. Chemical	R.C.	Condensation	
Consumption	Quantity Consumed (tons)						
	Average hourly flow (t/h)						
	Progressive (tons) to .../.../….						

(The duly completed tables can be found in the technical file.)

Electrical assessment

		TG I	TG II
CTE	Total production (Kw)		
	Total (kw)		
	Progressive (Kw) as of ../../2022		
	Progressive total (Kw)		
	Average hourly production in Kwh		
	Total hourly production in kWh		
	Number of hours of service (hours)		
	Progressive (hours) to ../../2022		
STEG	Total purchase (kw)		
	Average hourly purchase (kwh)		
	Progressive (Kw) as of ../../2022		

Production and purchase: from ... to ...

Consumption: from.. to...

	CTE	Production units	CDM	95 MP2	95 MP1	Total
Total consumption (kW)						
Average hourly consumption (KWh)						
Progressive (Kw) at ../../….						

Consumption from CTE's electrical energy production

Consumption from the STEG network:

The preliminary audit is notably a stage of collecting data, information and documents as well as knowledge of the installations. It is the subject of this energy audit which presents an initial assessment of the steam and electrical balances of the factory, energy consumption values on which more detailed investigations will take place in the next chapter.

	CTE	Units of production	CDM (TR3S)	95 MP3s	Lighting + Services general	Total
Total consumption (kW)						
Average hourly consumption (Kwh)						
Progressive (Kw) at ../../….						

CHAPTER 2: IN-DEPTH ENERGY AUDIT

Once the preliminary phase of the energy audit is completed, ANME grants a phase in the specifications relating to the energy audit which includes carrying out operations to measure energy consumption with consumer assessment. energy and methods of controlling energy use and equipment operation. This stage is an in-depth examination which researches, analyzes and evaluates energy saving possibilities and which subsequently facilitates the establishment of a detailed action plan.

According to ANME, the in-depth audit is made up of energy assessments of different levels:

- A level 1 energy balance
- A level 2 energy balance
- A level 3 energy balance

2.1 Energy assessment level 1

From the data collected at the company and from the measurements carried out during the preliminary audit, an overall energy and material balance sheet must be presented essentially in the form of tables which group together the specific consumptions:

- Turbo-generators
- Boilers

Specific consumption of turbogenerators

The calculation of the specific consumption of turbogenerators is done as follows:

$$Cspturbo = \frac{Qte\ Steam\ Consumed}{Qte\ electrical\ energy\ producted}$$

	Production (KW)	Steam consumption (t/h)	Progress of VHP consumption (tons)	Specific consumption (kg steam/KW)
TG I				
TG II				

Specific consumption of boilers

The specific consumption of boilers is calculated according to this formula:

$$\text{Cspboiler} = \frac{Qte\ Fuel\ Consumed}{Qte\ Steam\ produced}$$

CH 101	Steam produced (t/h)	Fuel Oil consumes(t/h)	Fuel Gas consumed (Nm3/h)	Fuel Gas consumed (t/h)	Specific consumption (Toe*10-3/ton of steam)

CH202	Steam produced (t/h)	Fuel Oil consumed (t/h)	Fuel Gas consumed (Nm3/h)	Fuel Gas consumed (t/h)	Specific consumption (Toe*10-3/ton of steam)
			***	***	

2.2 Energy balance level 2

It is a mass and energy balance of each production workshop (material / energy) which requires the presence of the daily report which includes measurement parameters involved in the development of this balance. The latter must follow energy balance n°1

As mentioned in the previous chapter, the preliminary audit assessments are carried out every day therefore the level 2 energy assessments will be carried out in relation to the latter.

Energy balance formula:

$$Energetic\ flow = Mass\ flow \times enthalpy$$

Enthalpy reading method (see enthalpy table appendix):

For the VHP the enthalpy reading is done as follows: the temperature is 440°C and the pressure is 40 Bar so the combination between them gives the enthalpy value.

For the VMP the temperature is 260°C and the pressure 11 Bar.

For the VBP the temperature is 200°C and the pressure 3 Bar.

VHP							
	Production		Consumption				
	CH101	CH202	TG1	TG2	SR	02 TK1	SEMI
Flow rate (Kg/h)							
Temperature (°C)							
Pressure (Bar)							
Enthalpy (Kcal/Kg)							
Energy flow (kcal/h)							

(The duly completed tables can be found in the technical file.)

VMP							
	Production			Consumption			
	TG1	SR (VHP-VMP)	CH-RC	SR (VMP-VBP	CTE	Topping	R.C.
Mass flow (Kg/h)							
Temperature (°C)							
Pressure (Bar)							
Enthalpy (kcal/kg)							
Energy flow (Kcal/h)							

(The duly completed tables can be found in the technical file.)

VBP							
	Production			Consumption			
	SR (VMP-VBP)	Turbine topping	Turbine-RC	CTE	CDM	Topping+chemical treatment	Cond
Mass flow (Kg/h)							
Temperature (°C)							
Pressure (Bar)							
Enthalpy (kcal/kg)							
Energy flow (Kcal/h)							

(The duly completed tables can be found in the technical file.)

2.3 Energy assessment level 3

At this stage, a detailed analysis is carried out, it is the main assessment of the audit which must essentially include:

- The methodology used for the in-depth diagnosis

- An energy balance of the main equipment (boilers)

2.3.1 Approach to calculating boiler energy balances

$$\sum \textbf{energies entering} = \sum \textbf{energies leaving} + \textbf{loses}$$

We will determine the efficiency of the two CTE boilers using direct and indirect methods in order to obtain more information on the condition of the boiler and the precision of the results.

Note that the quantities of theoretical air required by boiler 101 and boiler 202 depend on the flow rate of fuel consumed.

The components of fuel oil come in the following proportions:

- Carbon: 87%
- Hydrogen: 12%
- Sulphur: 0.6%
- Oxygen: 0.35%
- Nitrogen: 0.24%

Their combustion reactions are:

$$C + O_2 \rightarrow CO_2 + Heat$$

$$H_2 + {}^1/_2\, O_2 \rightarrow H_2O + Heat$$

$$S + O_2 \rightarrow SO_2 + Heat$$

Using a flow $\dot{m}$ of fuel oil (kg/h), the stoichiometric combustion of

Components of fuel oil determine the following masses and mole numbers:

- **Mass flow ṁ:**

ṁcarbon =ṁof fuel × 0.87

ṁhydrogen =ṁof fuel × 0.12

ṁsulfur =ṁof fuel × 0.006

ṁoxygen =ṁof fuel × 0.0035

ṁnitrogen =ṁof fuel × 0.0024

- **Molar mass**

M carbon = 0.012 Kg/mol

M hydrogen = 0.001 Kg/mol

M sulfur = 0.032 Kg/mol

Oxygenated M =0.016 Kg/mol

M nitrogen = 0.014 Kg/mol

SO :

- **Molar flow:** $\dot{n} = \frac{\dot{m}}{M}$
- ṅ carbon =ṁ carbon ÷ M carbon
- ṅ hydrogen =ṁ hydrogen ÷ M hydrogen
- ṅ sulfur =ṁ sulfur ÷ M sulfur
- ṅ oxygen =ṁoxygen÷M oxygen
- ṅ nitrogen =ṁ nitrogen÷M nitrogen

According to the combustion equations we have:

One mole of carbon requires one mole of oxygen,

For n moles of carbon, we need n moles of dioxygen,

One mole of hydrogen requires ½ moles of oxygen,

For n moles of dihydrogen, we need n/2 moles of dioxygen.

One mole of sulfur requires one mole of oxygen,

For n moles of sulfur, we need n moles of dioxygen,

- **Theoretical O2 molar flow**

This is the sum of the flow rates necessary for combustion.

$$\dot{n}\ \text{Theoretical O2} = \dot{n}\ \text{carbon} + (\dot{n}\ \text{hydrogen} \div 2) + \dot{n}\ \text{sulfur}$$

- **Theoretical molar air flow**

Knowing that oxygen represents 21 of air%

$$\dot{n}\ \text{air theoretical} = \dot{n}\ \text{Theoretical O2} \times \frac{100}{21}$$

- **Theoretical air mass flow:**

Molar mass of air = 0.21 × 32 + 0.79 × 28 = 28.84 kg/kmol

SO:

$$\dot{m}\ \text{theoretical air} = \dot{n}\ \text{air theoretical} \times \text{Molar mass of air}$$

- **Excess air:**

According to the smoke analysis in the STIR laboratory we have:

$$CO_2 = 6.13\%$$

$$O_2 = 4.5\%$$

$$\text{Excès d'air} = \frac{0.79 \times \%O_2}{0.21 \times (100 - \%CO_2) - \%O_2} \times \mathbf{100}$$

That is an excess of air of around 23%.

- **Actual airflow:**

$$\boldsymbol{Actual\ air\ flow} = \boldsymbol{Theoritical\ air\ flow}\ (\mathbf{1} + \boldsymbol{excés})$$

- **Calculation of the energy introduced Qe:**

The energy introduced to the boiler is given by the following formula:

$$\boldsymbol{Q_e = \dot{m}(fuel\ oil) \times PCI + \dot{m}(v.a) \times \Delta H(v.a) + \dot{m}(air) \times \Delta H(air) + \dot{m}\,(water) \times\ \Delta H(water)}$$

- **Calculation of Qs (useful energy):**

The heat flow recovered by the water at the boiler level is therefore:

$$\boldsymbol{Qs\ =\ m_v\ \times\ (H_v - H_e)}$$

According to the table of enthalpies of superheated steam we have:

Hey= kcal/kg,116.23 **Hv = 777**kcal/kg,

- **Calculation ofQ_p(energy lost):**

The energy lost can be determined with the following expression:

$$\boldsymbol{Q_p = Q_e - Q_s}$$

- **The yield :**

The boiler efficiency is given by the following formula:

$$\boldsymbol{\eta = {Q_s}/{Q_e}}$$

Specific consumption of the boiler

The specific consumption of boiler 101 is given by the following formula:

$$\boldsymbol{Csp = \frac{Qte\ Fuel\ Consumed}{VHP\ production}}$$

2.3.2 Boiler energy balances

After clarifying the calculation methodology, a detailed assessment must be presented essentially in the form of tables following the model below:

ENERGY BALANCE OF BOILER N° + (DATE)

Fuel chemical elements	Percentage %	Mass Flow (kg/h)	Molar Mass (kg/mol)	Molar Flow (Mol/h)
Carbon				
Hydrogen				
Sulfur				
Oxygen				
Nitrogen				
Fuel				

Theoretical O^2 molar flow (Mol/h)	
Theoretical molar air flow (mol/h)	
Theoretical air mass flow (Kg/h)	
Excess air	
Actual air flow (Kg/h)	

	Mass flow (Kg/h)	Enthalpy (Kcal/Kg)	Lower calorific value (Kcal/Kg)
Water			
Atomizing steam			
High pressure steam			
Air			
Fuel			

Energy introduced Qe (Kcal/h)	
Useful Energy Qs (Kcal/h)	
Lost Energy Qp (Kcal/h)	
Yield	
Specific consumption (Kg Fuel /Kg Vap)	

The efficiency of a boiler depends on its condition and its operation. To achieve satisfactory yields, it is necessary to check the various installations of the plant such as the fuel tanks, the water treatment units, etc. in addition to the operating status.

The evaluation of the performance of the equipment serves to study the effectiveness of the CTE and identify the causes of major problems which could negatively affect the energy production process and from these results the development of a plan is decided. action plan bringing together all the solutions and plans proposed as a starting point.

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Energy Auditing Report (Anex : STIR DATA)

STEAM CONSUMPTION TABLES

03/08/2022 at 10 AM.:

Steam balance (Kg/h)	
HPV (TG1)	12400
HPV (TG2)	5400
VHP Platforming	2400
VBP	3200
VHP reduction station	5900
VHP sea water	0
VMP	6900

03/09/2022 at 10 AM :

Steam balance (Kg/h)	
VHP (TG1)	20500
HPV (TG2)	5200
VHP Platforming	2200
VBP	2700
VHP reduction station	2400
VHP sea water	0
VMP	6800

03/10/2022 at 10 AM :

Steam balance (Kg/h)	
VHP (TG1)	21500
HPV (TG2)	4900
VHP Platforming	2400
VBP	3800
VHP reduction station	800
VHP sea water	0
VMP	5900

03/11/2022 at 10 AM :

Steam balance (Kg/h)	
HPV (TG1)	21500
HPV (TG2)	5000
VHP Platforming	2300
VBP	3500
VHP reduction station	500
VHP sea water	0
VMP	7000

03/14/2022 at 10 AM :

Steam balance (Kg/h)	
VHP (TG1)	21500
HPV (TG2)	5000
VHP Platforming	2100
VBP	2400
VHP reduction station	24700
VHP sea water	0
VMP	7000

03/15/2022 at 10 AM :

Steam balance (Kg/h)	
VHP (TG1)	21000
HPV (TG2)	4900
VHP Platforming	2200
VBP	1600
VHP reduction station	0
VHP sea water	0
VMP	7000

03/16/2022 at 10 AM:

Steam balance (Kg/h)	
VHP (TG1)	21500
HPV (TG2)	5000
VHP Platforming	2200
VBP	2900
VHP reduction station	0
VHP sea water	0
VMP	6900

03/17/2022 at 10 AM :

Steam balance (Kg/h)	
VHP (TG1)	21500
HPV (TG2)	5300
VHP Platforming	2100
VBP	2300
VHP reduction station	400
VHP sea water	0
VMP	7000

03/18/2022 at 10 AM :

Steam balance (Kg/h)	
HPV (TG1)	21500
HPV (TG2)	5000
VHP Platforming	2200
VBP	2800
VHP reduction station	500
VHP sea water	0
VMP	7300

ELECTRICITY PRODUCTION TABLE

03/08/2022 at 10 AM :

Production (Counter in KWh)			
TG1	**TG2**	**STEG**	
7384662	33870779	TR1: 14056200	TR2: 13357100

03/09/2022 at 10 AM :

Production (Counter in KWh)			
TG1	**TG2**	**STEG**	
7405142	33890602	TR1:14059000	TR2:13360000

03/10/2022 at 10 AM :

Production (Counter in KWh)			
TG1	**TG2**	**STEG**	
74274368	33910669	TR1:14061000	TR2:13362000

03/11/2022 at 10 AM :

Production (Counter in KWh)			
TG1	**TG2**	**STEG**	
74507061	33930437	TR1:14064000	TR2:13364000

03/14/2022 at 10 AM :

Production (Counter in KWh)			
TG1	**TG2**	**STEG**	
74520079	33978512	TR1: 14075000	TR2: 13370000

03/15/2022 at 10 AM :

Production (Counter in KWh)			
TG1	**TG2**	**STEG**	
74545127	34006212	TR1:14075000	TR2:13377000

03/16/2022 at 10 AM :

Production (Counter in KWh)			
TG1	**TG2**	**STEG**	
75679321	34026622	TR1:14079900	TR2: 13381800

03/17/2022 at 10 AM :

Production (Counter in KWh)			
TG1	**TG2**	**STEG**	
75900817	34047022	TR1:14083600	TR2: 13385600

03/18/2022 at 10 AM :

Production (Counter in KWh)			
TG1	**TG2**	**STEG**	
7613021	34067021	TR1:14087000	TR2:13389200

MATERIAL BALANCES

1. VHP assessment

From March 7 to 8, 2022 :

		VHP		Total (tons)
		CH 101	CH202	
Production	Quantity produced (tons)	368	274	**642**
	Progressive (tons) as of 03/08/2022	2385	1964	**4349**
	Average hourly flow (t/h)	15.3	11.4	**26.8**
	Number of hours of service (hours)	24	24	
	Progressive (hours) as of 03/08/2022	168	168	

		VHP					Total (tons)
		TG I	TG II	SR VHP - VMP	02 TK1	EMI Station	
Consumption	Quantity Consumed (tons)	461	128	5	48	0	**642**
	Average hourly flow (t/h)	19.2	5.3	0.2	2	0	**26.8**
	Progressive (tons) as of 03/08/2022	3081	897	35	336	0	**4349**

From March 8 to 9, 2022 :

		VHP		Total (tons)
		CH 101	CH202	
Production	Quantity produced (tons)	326	317	**643**
	Progressive (tons) as of 03/09/2022	2711	2281	**4992**
	Average hourly flow (t/h)	13.6	13.2	**26.8**
	Number of hours of service (hours)	24	24	
	Progressive (hours) as of 03/09/2022	192	192	

		VHP					Total (tons)
		TG I	TG II	SR VHP - VMP	02 TK1	EMI Station	
Consumption	Quantity Consumed (tons)	463	127	5	48	0	**643**
	Average hourly flow (t/h)	19.3	5.3	0.2	2	0	**26.8**
	Progressive (tons) as of 03/09/2022	3544	1024	40	384	0	**4992**

From March 9 to 10, 2022 :

		VHP		Total (tons)
		CH 101	CH202	
Production	Quantity produced (tons)	311	332	**643**
	Progressive (tons) as of 03/10/2022	3022	2613	**5635**
	Average hourly flow (t/h)	13	13.9	**26.8**
	Number of hours of service (hours)	24	24	
	Progressive (hours) as of 03/10/2022	216	216	

		VHP					Total (tons)
		TG I	TG II	SR VHP - VMP	02 TK1	EMI Station	
Consumption	Quantity Consumed (tons)	464	124	7	48	0	**643**
	Average hourly flow (t/h)	19.3	5.2	0.3	2	0	**26.8**
	Progressive (tons) as of 03/10/2022	4008	1148	47	432	0	**5635**

From March 10 to 11, 2022:

		VHP		Total (tons)
		CH 101	CH202	
Production	Quantity produced (tons)	326	317	**643**
	Progressive (tons) as of 03/11/2022	3353	2925	**6278**
	Average hourly flow (t/h)	13.6	13.2	**26.8**
	Number of hours of service (hours)	24	24	
	Progressive (hours) as of 03/11/2022	240	240	

		VHP					Total (tons)
		TG I	TG II	SR VHP - VMP	02 TK1	EMI Station	
Consumption	Quantity Consumed (tons)	475	115	5	48	0	**643**
	Average hourly flow (t/h)	19.8	4.8	0.2	2	0	**26.8**
	Progressive (tons) as of 03/11/2022	4483	1263	52	480	0	**6278**

From March 11 to 14, 2022:

		VHP		Total (tons)
		CH 101	CH202	
Production	Quantity produced (tons)	1030	490	**1970**
	Progressive (tons) as of 03/14/2022	4383	3865	**8248**
	Average hourly flow (t/h)	14.3	13	**27.4**
	Number of hours of service (hours)	72	72	
	Progressive (hours) as of 03/14/2022	312	312	

		VHP					Total (tons)
		TG I	TG II	SR VHP - VMP	02 TK1	EMI Station	
Consumption	Quantity Consumed (tons)	1453	355	18	144	0	**1970**
	Average hourly flow (t/h)	20.2	4.9	0.3	2	0	**27.4**
	Progressive (tons) as of 03/14/2022	5936	1618	70	624	0	**8248**

From 14 March to 15, 2022:

		VHP		Total (tons)
		CH 101	CH202	
Production	Quantity produced (tons)	335	330	**665**
	Progressive (tons) as of 03/15/2022	4718	4195	**8913**
	Average hourly flow (t/h)	14	13.8	**27.7**
	Number of hours of service (hours)	24	24	
	Progressive (hours) as of 03/15/2022	336	336	

		VHP					Total (tons)
		TG I	TG II	SR VHP - VMP	02 TK1	EMI Station	
Consumption	Quantity Consumed (tons)	490	117	10	48	0	**665**
	Average hourly flow (t/h)	20.4	4.9	0.4	2	0	**27.7**
	Progressive (tons) as of 03/15/2022	6426	1735	80	672	0	**8913**

From March 15 to 16, 2022:

		VHP		Total (tons)
		CH 101	CH202	
Production	Quantity produced (tons)	361	275	**636**
	Progressive (tons) as of 03/16/2022	5079	4469	**9548**
	Average hourly flow (t/h)	15	11.5	**26.5**
	Number of hours of service (hours)	24	24	
	Progressive (hours) as of 03/16/2022	360	360	

		VHP					Total (tons)
		TG I	TG II	SR VHP - VMP	02 TK1	EMI Station	
Consumption	Quantity Consumed (tons)	458	120	10	48	0	**636**
	Average hourly flow (t/h)	19.1	5	0.4	2	0	**26.5**
	Progressive (tons) as of 03/16/2022	6883	1855	90	720	0	**9548**

From March 16 to 17, 2022:

		VHP		Total (tons)
		CH 101	CH202	
Production	Quantity produced (tons)	375	259	**634**
	Progressive (tons) as of 03/17/2022	5454	4728	**10182**
	Average hourly flow (t/h)	15.6	10.8	**26.4**
	Number of hours of service (hours)	24	24	
	Progressive (hours) as of 03/17/2022	384	384	

		VHP					Total (tons)
		TG I	TG II	SR VHP - VMP	02 TK1	EMI Station	
Consumption	Quantity Consumed (tons)	454	122	10	48	0	**634**
	Average hourly flow (t/h)	18.9	5.1	0.4	2	0	**26.4**
	Progressive (tons) as of 03/17/2022	7337	1977	100	768	0	**10182**

From March 17 to 18, 2022:

		VHP		Total (tons)
		CH 101	CH202	
Production	Quantity produced (tons)	372	268	**640**
	Progressive (tons) as of 03/18/2022	5826	4996	**10882**
	Average hourly flow (t/h)	15.5	11.2	**26.7**
	Number of hours of service (hours)	24	24	
	Progressive (hours) as of 03/18/2022	480	408	

		VHP					Total (tons)
		TG I	TG II	SR VHP - VMP	02 TK1	EMI Station	
Consumption	Quantity Consumed (tons)	468	119	5	48	0	**640**
	Average hourly flow (t/h)	19.5	5.0	0.2	2	0	**26.7**
	Progressive (tons) as of 03/18/2022	7805	2096	105	816	0	**10822**

1. VMP assessment

From March 7 to 8, 2022:

		VMP			Total (tons)
		TG I	SR VHP - VMP	RC boiler	
Production	Quantity produced (tons)	461	5	36	**502**
	Average hourly flow (t/h)	19.2	0.2	1.5	**20.9**
	Progressive (tons) as of 03/08/2022	3081	35	252	**3368**

		VMP				Total (tons)
		SR VMP - VBP	CTE	Topping+ LPG treatment	R.C.	
Consumption	**Quantity Consumed (tons)**	104	192	108	96	**500**
	Average hourly flow (t/h)	4.3	8	4.5	4	**20.8**
	Progressive (tons) as of 03/08/2022	593	1344	756	672	**3365**

From March 8 to 9, 2022:

		VMP			Total (tons)
		TG I	SR VHP - VMP	RC boiler	
Production	**Quantity produced (tons)**	463	5	36	**504**
	Average hourly flow (t/h)	19.3	0.2	1.5	**21**
	Progressive (tons) as of 03/09/2022	3544	40	288	**372**

		VMP				Total (tons)
		SR VMP - VBP	CTE	Topping+ LPG treatment	R.C.	
Consumption	**Quantity Consumed (tons)**	108	192	108	96	**504**
	Average hourly flow (t/h)	4.4	8	4.5	4	**21**
	Progressive (tons) as of 03/09/2022	701	1536	864	768	**3869**

From March 9 to 10, 2022:

		VMP			Total (tons)
		TG I	SR VHP - VMP	RC boiler	
Production	**Quantity produced (tons)**	464	7	36	**507**
	Average hourly flow (t/h)	19.3	0.3	1.5	**21.1**
	Progressive (tons) as of 03/10/2022	4008	47	324	**4379**

		VMP				Total (tons)
		SR VMP - VBP	CTE	Topping+ LPG treatment	R.C.	
Consumption	**Quantity Consumed (tons)**	110	192	108	96	**506**
	Average hourly flow (t/h)	4.6	8	4.5	4	**21.1**
	Progressive (tons) as of 03/10/2022	811	1728	972	864	**4375**

From March 10 to 11, 2022:

		VMP			Total (tons)
		TG I	SR VHP - VMP	RC boiler	
Production	**Quantity produced (tons)**	475	5	36	**516**
	Average hourly flow (t/h)	19.8	0.2	1.5	**21.5**
	Progressive (tons) as of 03/11/2022	4483	52	360	**4895**

		VMP				Total (tons)
		SR VMP - VBP	CTE	Topping+ LPG treatment	R.C.	
Consumption	**Quantity Consumed (tons)**	12	192	108	96	**516**
	Average hourly flow (t/h)	5,	8	4.5	4	**21.5**
	Progressive (tons) as of 03/11/2022	931	1920	1080	960	**4891**

From March 11 to 14, 2022:

		VMP			Total (tons)
		TG I	SR VHP - VMP	RC boiler	
Production	**Quantity produced (tons)**	1453	18	108	**1579**
	Average hourly flow (t/h)	20.2	0.3	1.5	**21.9**
	Progressive (tons) as of 03/14/2022	5936	70	468	**6474**

		VMP				Total (tons)
		SR VMP - VBP	CTE	Topping+ LPG treatment	R.C.	
Consumption	**Quantity Consumed (tons)**	391	576	324	288	**1579**
	Average hourly flow (t/h)	5.4	8	4.5	4	**21.9**
	Progressive (tons) as of 03/14/2022	1322	2496	1404	1248	**6470**

From March 14 to 15, 2022:

		VMP			Total (tons)
		TG I	SR VHP - VMP	RC boiler	
Production	**Quantity produced (tons)**	490	10	36	**536**
	Average hourly flow (t/h)	20.4	0.4	1.5	**22.3**
	Progressive (tons) as of 03/15/2022	6426	80	504	**7010**

		VMP				Total (tons)
		SR VMP - VBP	CTE	Topping+ LPG treatment	R.C.	
Consumption	**Quantity Consumed (tons)**	140	192	108	96	**536**
	Average hourly flow (t/h)	5.8	8	4.5	4	**22.3**
	Progressive (tons) as of 03/15/2022	1462	2688	1512	1344	**7006**

From March 15 to 16, 2022:

		VMP			Total (tons)
		TG I	SR VHP - VMP	RC boiler	
Production	**Quantity produced (tons)**	485	10	36	**504**
	Average hourly flow (t/h)	19.1	0.4	1.5	**21**
	Progressive (tons) as of 03/16/2022	6883	90	540	**7513**

		VMP				Total (tons)
		SR VMP - VBP	CTE	Topping+ LPG treatment	R.C.	
Consumption	**Quantity Consumed (tons)**	107	192	108	96	**503**
	Average hourly flow (t/h)	4.5	8	4.5	4	**21**
	Progressive (tons) as of 03/16/2022	1569	2880	1620	1440	**7509**

From March 16 to 17, 2022:

		VMP			Total (tons)
		TG I	SR VHP - VMP	RC boiler	
Production	**Quantity produced (tons)**	454	10	36	**500**
	Average hourly flow (t/h)	18.9	0.4	1.5	**20.8**
	Progressive (tons) as of 03/17/2022	7337	100	576	**8013**

		VMP				Total (tons)
		SR VMP - VBP	CTE	Topping+ LPG treatment	R.C.	
Consumption	**Quantity Consumed (tons)**	104	192	108	96	**500**
	Average hourly flow (t/h)	4.3	8	4.5	4	**20.8**
	Progressive (tons) as of 03/17/2022	1673	3072	1728	1536	**8009**

From March 17 to 18, 2022:

		VMP			Total (tons)
		TG I	SR VHP - VMP	RC boiler	
Production	**Quantity produced (tons)**	468	5	36	**509**
	Average hourly flow (t/h)	19.5	0.2	1.5	**21.2**
	Progressive (tons) as of 03/18/2022	7805	105	612	**8522**

		VMP				Total (tons)
		SR VMP - VBP	CTE	Topping+ LPG treatment	R.C.	
Consumption	**Quantity Consumed (tons)**	112	192	108	96	**508**
	Average hourly flow (t/h)	4.7	8	4.5	4	**21.2**
	Progressive (tons) as of 03/18/2022	1785	3264	1836	1632	**8517**

2. VBP assessment

From March 7 to 8, 2022:

		VBP			Total (tons)
		SR VMP - VBP	Topping Turbines	RC turbines	
Production	**Quantity produced (tons)**	104	0	24	**128**
	Average hourly flow (t/h)	4.3	0	1	**5.3**
	Progressive (tons) as of 03/08/2022	593	0	144	**737**

		VBP					Total (tons)
		CTE	CDM	Topping + Line. Chemical	R.C.	Condensation	
Consumption	**Quantity Consumed (tons)**	14	48	24	12	29	**127**
	Average hourly flow (t/h)	0.6	2	1	0.5	1.2	**5.3**
	Progressive (tons) as of 03/08/2022	95	269	168	84	116	**732**

From March 8 to 9, 2022:

		VBP			Total (tons)
		SR VMP - VBP	**Topping Turbines**	**RC turbines**	
Production	**Quantity produced (tons)**	108	0	24	**132**
	Average hourly flow (t/h)	4.5	0	1	**5.5**
	Progressive (tons) as of 03/09/2022	701	0	168	**869**

		VBP					Total (tons)
		CTE	**CDM**	**Topping + line. Chemical**	**R.C.**	**Condensation**	
Consumption	**Quantity Consumed (tons)**	14	48	24	12	34	**132**
	Average hourly flow (t/h)	0.6	2	1	0.5	1.4	**5.5**
	Progressive (tons) as of 03/09/2022	109	317	192	96	150	**864**

From March 9 to 10, 2022:

		VBP			Total (tons)
		SR VMP - VBP	**Topping Turbines**	**RC turbines**	
Production	**Quantity produced (tons)**	110	0	24	**134**
	Average hourly flow (t/h)	4.6	0	1.0	**5.6**
	Progressive (tons) as of 03/10/2022	811	0	192	**1003**

		VBP					Total (tons)
		CTE	**CDM**	**Topping + Line. Chemical**	**R.C.**	**Condensation**	
Consumption	**Quantity Consumed (tons)**	14	48	24	12	36	**134**
	Average hourly flow (t/h)	0.6	2	1	0.5	1.5	**5.6**
	Progressive (tons) as of 03/10/2022	123	365	216	108	186	**998**

From March 10 to 11, 2022:

		VBP			Total (tons)
		SR VMP - VBP	**Topping Turbines**	**RC turbines**	
Production	**Quantity produced (tons)**	120	0	24	**144**
	Average hourly flow (t/h)	5.0	0	1	**6**
	Progressive (tons) as of 03/11/2022	931	0	216	**1147**

		VBP					Total (tons)
		CTE	**CDM**	**Topping + line. Chemical**	**R.C.**	**Condensation**	
Consumption	**Quantity Consumed (tons)**	12	48	36	12	36	**144**
	Average hourly flow (t/h)	0.5	2	1.5	0.5	1.5	**6**
	Progressive (tons) as of 03/11/2022	135	413	252	120	222	**1142**

From March 11 to 14, 2022 :

		VBP			Total (tons)
		SR VMP - VBP	**Topping Turbines**	**RC turbines**	
Production	**Quantity produced (tons)**	391	0	72	**463**
	Average hourly flow (t/h)	5.4	0	1	**6.4**
	Progressive (tons) as of 03/14/2022	1322	0	288	**1610**

		VBP					Total (tons)
		CTE	**CDM**	**Topping + line. Chemical**	**R.C.**	**Condensation**	
Consumption	**Quantity Consumed (tons)**	36	144	144	36	101	**461**
	Average hourly flow (t/h)	0.5	2	2	0.5	1.4	**6.4**
	Progressive (tons) as of 03/14/2022	171	557	396	156	323	**1603**

From March 14 to 15, 2022:

		VBP			Total (tons)
		SR VMP - VBP	**Topping Turbines**	**RC turbines**	
Production	**Quantity produced (tons)**	140	0	24	**164**
	Average hourly flow (t/h)	5.8	0	1	**6.8**
	Progressive (tons) as of 03/15/2022	1462	0	312	**1774**

		VBP					Total (tons)
		CTE	**CDM**	**Topping + line. Chemical**	**R.C.**	**Condensation**	
Consumption	**Quantity Consumed (tons)**	12	60	48	12	31	**163**
	Average hourly flow (t/h)	0.5	2.5	2	0.5	1.3	**6.8**
	Progressive (tons) as of 03/15/2022	183	617	444	168	354	**1766**

From March 15 to 16, 2022 :

		VBP			Total (tons)
		SR VMP - VBP	**Topping Turbines**	**RC turbines**	
Production	**Quantity produced (tons)**	107	0	24	**131**
	Average hourly flow (t/h)	4.5	0	1	**5.5**
	Progressive (tons) as of 03/16/2022	1569	0	336	**1905**

		VBP					Total (tons)
		CTE	**CDM**	**Topping + line. Chemical**	**R.C.**	**Condensation**	
Consumption	**Quantity Consumed (tons)**	12	48	48	12	10	**130**
	Average hourly flow (t/h)	0.5	2	2	0.5	0.4	**5.4**
	Progressive (tons) as of 03/16/2022	195	665	492	180	364	**1896**

From March 16 to 17, 2022:

		VBP			Total (tons)
		SR VMP - VBP	**Topping Turbines**	**RC turbines**	
Production	**Quantity produced (tons)**	104	0	24	**128**
	Average hourly flow (t/h)	4.3	0	1	**5.3**
	Progressive (tons) as of 03/17/2022	1673	0	360	**2033**

		VBP					Total (tons)
		CTE	**CDM**	**Topping + line. Chemical**	**R.C.**	**Condensation**	
Consumption	**Quantity Consumed (tons)**	12	8	48	12	7	**127**
	Average hourly flow (t/h)	0.5	2	2	0.5	0.3	**5.3**
	Progressive (tons) as of 03/17/2022	207	713	540	192	371	**2023**

From March 17 to 18, 2022 :

		VBP			Total (tons)
		SR VMP - VBP	**Topping Turbines**	**RC turbines**	
Production	**Quantity produced (tons)**	112	0	24	**136**
	Average hourly flow (t/h)	4.7	0	1	**5.7**
	Progressive (tons) as of 03/18/2022	1785	0	384	**2169**

		VBP					Total (tons)
		CTE	**CDM**	**Topping + line. Chemical**	**R.C.**	**Condensation**	
Consumption	**Quantity Consumed (tons)**	12	48	48	12	14	**134**
	Average hourly flow (t/h)	0.5	2	2	0.5	0.6	**5.6**
	Progressive (tons) as of 03/18/2022	219	761	588	204	385	**2157**

3. Electrical balances

		TG I	TG II
CTE	**Total production (Kw)**	20300	21435
	Total (kw)	**41735**	
	Progressive (Kw) as of 03/08/2022	140350	151190
	Progressive total (Kw)	**291540**	
	Average hourly production in Kwh	845.8	893.1
	Total hourly production in kWh	**1739**	
	Number of hours of service (hours)	24	24
	Progressive (hours) as of 03/08/2022	168	168
STEG	**Total purchase (kw)**	**8400**	
	Average hourly purchase (kwh)	**350**	
	Progressive (Kw) as of 03/08/2022	**60200**	

Production and purchase: from March 7 to 8, 2022:

Production and purchase: from March 8 to 9, 2022:

		TG I	TG II
CTE	**Total production (Kw)**	20790	20860
	Total (kw)	**41650**	
	Progressive (Kw) as of 03/09/2022	161140	172050
	Progressive total (Kw)	**333190**	
	Average hourly production in Kwh	866.3	869.2
	Total hourly production in kWh	**1735**	
	Number of hours of service (hours)	24	24
	Progressive (hours) as of 03/09/2022	192	192
STEG	**Total purchase (kw)**	**6700**	
	Average hourly purchase (kwh)	**279**	
	Progressive (Kw) as of 03/09/2022	**66900**	

Production and purchase: from March 9 to 10, 2022:

		TG I	TG II
CTE	**Total production (Kw)**	21815	20062
	Total (kw)	**41877**	
	Progressive (Kw) as of 03/10/2022	182955	192112
	Progressive total (Kw)	**375067**	
	Average hourly production in Kwh	909	835.9
	Total hourly production in kWh	**1745**	
	Number of hours of service (hours)	24	24
	Progressive (hours) as of 03/10/2022	216	216
STEG	**Total purchase (kw)**	**5300**	
	Average hourly purchase (kwh)	**221**	
	Progressive (Kw) as of 03/10/2022	**71200**	

Production and purchase: March 10 to 11, 2022:

		TG I	TG II
CTE	**Total production (Kw)**	23304	19785
	Total (kw)	**43089**	
	Progressive (Kw) as of 03/11/2022	206259	211897
	Progressive total (Kw)	**418156**	
	Average hourly production in Kwh	971	824.4
	Total hourly production in kWh	**1795**	
	Number of hours of service (hours)	24	24
	Progressive (hours) as of 03/11/2022	240	240
STEG	**Total purchase (kw)**	**5900**	
	Average hourly purchase (kwh)	**246**	
	Progressive (Kw) as of 03/11/2022	**77100**	

Production and purchase: March 11 to 14:

		TG I	TG II
CTE	**Total production (Kw)**	70756	56868
	Total (kw)	**127624**	
	Progressive (Kw) as of 03/14/2022	277015	268765
	Progressive total (Kw)	**545780**	
	Average hourly production in Kwh	982.7	789.8
	Total hourly production in kWh	**1773**	
	Number of hours of service (hours)	72	72
	Progressive (hours) as of 03/14/2022	312	312
STEG	**Total purchase (kw)**	**17700**	
	Average hourly purchase (kwh)	**246**	
	Progressive (Kw) as of 03/14/2022	**94800**	

Production and purchase: March 14 to 15:

		TG I	TG II
CTE	**Total production (Kw)**	23690	18980
	Total (kw)	**42670**	
	Progressive (Kw) as of 03/15/2022	300705	287745
	Progressive total (Kw)	**588450**	
	Average hourly production in Kwh	987.1	790.8
	Total hourly production in kWh	**1778**	
	Number of hours of service (hours)	24	24
	Progressive (hours) as of 03/15/2022	336	336
STEG	**Total purchase (kw)**	**6800**	
	Average hourly purchase (kwh)	**283**	
	Progressive (Kw) as of 03/15/2022	**101600**	

Production and purchase: March 15 to 16, 2022:

		TG I	TG II
CTE	Total production (Kw)	22435	19885
	Total (kw)	**42320**	
	Progressive (Kw) as of 03/16/2022	323140	307630
	Progressive total (Kw)	**630770**	
	Average hourly production in Kwh	934.8	828.5
	Total hourly production in kWh	**1763**	
	Number of hours of service (hours)	24	24
	Progressive (hours) as of 03/16/2022	360	360
STEG	Total purchase (kw)	**7600**	
	Average hourly purchase (kwh)	**317**	
	Progressive (Kw) as of 03/16/2022	**109200**	

Production and purchase: March 16 to 17, 2022:

		TG I	TG II
CTE	Total production (Kw)	22310	20340
	Total (kw)	**42650**	
	Progressive (Kw) as of 03/17/2022	345450	327970
	Progressive total (Kw)	**673420**	
	Average hourly production in Kwh	929.6	847.5
	Total hourly production in kWh	**1777**	
	Number of hours of service (hours)	24	24
	Progressive (hours) as of 03/17/2022	384	384
STEG	Total purchase (kw)	**7500**	
	Average hourly purchase (kwh)	**312**	
	Progressive (Kw) as of 03/17/2022	**116700**	

Production and purchase: March 17 to 18, 2022:

		TG I	TG II
CTE	Total production (Kw)	22870	20230
	Total (kw)	**43100**	
	Progressive (Kw) as of 03/18/2022	368320	348200
	Progressive total (Kw)	**716520**	
	Average hourly production in Kwh	952.9	842.9
	Total hourly production in kWh	**1796**	
	Number of hours of service (hours)	24	24
	Progressive (hours) as of 03/18/2022	408	408
STEG	Total purchase (kw)	**6800**	
	Average hourly purchase (kwh)	**283**	
	Progressive (Kw) as of 03/18/2022	**123500**	

Consumption from CTE's electrical energy production:

Consumption from March 7 to March 8, 2022:

	CTE	**Production units**	**CDM**	**95 MP2**	**95 MP1**	**Total**
Total consumption (kW)	7757	27848	0	0	6130	**41735**
Average hourly consumption (Kwh)	323	1160	0	0	255	**1739**
Progressive (Kw) as of 03/08/2022	54186	194544	0	0	42810	**291540**

Consumption from March 8 to 9, 2022:

	CTE	**Production units**	**CDM**	**95 MP2**	**95 MP1**	**Total**
Total consumption (kW)	8004	27886	0	0	5760	**41650**
Average hourly consumption (Kwh)	33	1162	0	0	240	**1735**
Progressive (Kw) as of 03/09/2022	62190	22430	0	0	48570	**333190**

Consumption from March 9 to 10, 2022:

	CTE	Production units	CDM	95 MP2	95 MP1	Total
Total consumption (kW)	8549	27218	0	0	6110	**41877**
Average hourly consumption (Kwh)	356	1134	0	0	255	**1745**
Progressive (Kw) as of 03/10/2022	70739	249648	0	0	54680	**375067**

Consumption from March 10 to 11, 2022:

	CTE	Production units	CDM	95 MP2	95 MP1	Total
Total consumption (kW)	8963	27946	0	0	6180	**43089**
Average hourly consumption (Kwh)	373	1164	0	0	257	**1795**
Progressive (Kw) as of 03/11/2022	79702	277594	0	0	60860	**418156**

Consumption from March 11 to 14, 2022:

	CTE	Production units	CDM	95 MP2	95 MP1	Total
Total consumption (kW)	25729	83445	0	0	18450	**127624**
Average hourly consumption (Kwh)	357	1159	0	0	256	**1773**
Progressive (Kw) as of 03/14/2022	105431	361039	0	0	79310	**545780**

Consumption from March 14 to 15, 2022:

	CTE	Production units	CDM	95 MP2	95 MP1	Total
Total consumption (kW)	8823	27677	0	0	6170	**42670**
Average hourly consumption (Kwh)	368	1153	0	0	257	**1778**
Progressive (Kw) as of 03/15/2022	114254	388716	0	0	85480	**588450**

Consumption from March 15 to 16, 2022 :

	CTE	Production units	CDM	95 MP2	95 MP1	Total
Total consumption (kW)	8520	27710	0	0	6090	**42320**
Average hourly consumption (Kwh)	355	1155	0	0	254	**1763**
Progressive (Kw) as of 03/16/2022	122774	416426	0	0	91570	**630770**

Consumption from March 16 to 17, 2022 :

	CTE	Production units	CDM	95 MP2	95 MP1	Total
Total consumption (kW)	8469	28061	0	0	6120	**42650**
Average hourly consumption (Kwh)	353	1169	0	0	255	**1777**
Progressive (Kw) as of 03/17/2022	131235	444495	0	0	97690	**673420**

Consumption from March 17 to 18, 2022:

	CTE	Production units	CDM	95 MP2	95 MP1	Total
Total consumption (kW)	8733	28137	0	0	6230	**43100**
Average hourly consumption (Kwh)	364	1172	0	0	260	**1796**
Progressive (Kw) as of 03/18/2022	139968	472632	0	0	103920	**716520**

Consumption from the STEG network:

Consumption from March 7 to 8, 2022:

	CTE	Units of production	CDM (TR3S)	95 MP3s	Lighting+Services general	Total
Total consumption (kW)	0	0	7818	0	582	**8400**
Average hourly consumption (Kwh)	0	0	326	0	24	**350**
Progressive (Kw) as of 03/08/2022	0	0	55435	0	4765	**60200**

Consumption from March 8 to 9, 2022 :

	CTE	Units of production	CDM (TR3S)	95 MP3s	Lighting+Services general	Total
Total consumption (kW)	0	0	4958	820	922	**6700**
Average hourly consumption (Kwh)	0	0	207	34	38	**279**
Progressive (Kw) as of 03/09/2022	0	0	60393	820	5687	**66900**

Consumption from March 9 to 10, 2022 :

	CTE	Units of production	CDM (TR3S)	95 MP3s	Lighting+Services general	Total
Total consumption (kW)	0	0	4479	0	821	**5300**
Average hourly consumption (Kwh)	0	0	187	0	34	**221**
Progressive (Kw) as of 03/10/2022	0	0	64872	820	5508	**71200**

Consumption from March 10 to 11, 2022:

	CTE	Units of production	CDM (TR3S)	95 MP3s	Lighting+Services general	Total
Total consumption (kW)	0	0	5296	0	604	**5900**
Average hourly consumption (Kwh)	0	0	221	0	25	**246**
Progressive (Kw) as of 03/11/2022	0	0	70168	820	6112	**77100**

Consumption from March 11 to 14, 2022:

	CTE	Units of production	CDM (TR3S)	95 MP3s	Lighting+Services general	Total
Total consumption (kW)	0	0	14730	0	2970	**17700**
Average hourly consumption (Kwh)	0	0	205	0	41	**246**
Progressive (Kw) as of 03/14/2022	0	0	84898	820	9082	**94800**

Consumption from March 14 to 15, 2022 :

	CTE	Units of production	CDM (TR3S)	95 MP3s	Lighting+Services general	Total
Total consumption (kW)	0	0	6055	0	745	**6800**
Average hourly consumption (Kwh)	0	0	252	0	31	**283**
Progressive (Kw) as of 03/15/2022	0	0	90953	820	9827	**101600**

Consumption from March 15 to 16, 2022:

	CTE	Units of production	CDM (TR3S)	95 MP3s	Lighting+Services general	Total
Total consumption (kW)	0	0	6073	0	1527	**7600**
Average hourly consumption (Kwh)	0	0	253	0	64	**317**
Progressive (Kw) as of 03/16/2022	0	0	97026	820	11354	**109200**

Consumption from March 16 to 17, 2022 :

	CTE	Units of production	CDM (TR3S)	95 MP3s	Lighting+Services general	Total
Total consumption (kW)	0	0	6400	0	1100	**7500**
Average hourly consumption (Kwh)	0	0	267	0	46	**312**
Progressive (Kw) as of 03/17/2022	0	0	103426	820	12454	**116700**

Consumption from March 17 to 18, 2022:

	CTE	Units of production	CDM (TR3S)	95 MP3s	Lighting+Services general	Total
Total consumption (kW)	0	0	5954	0	846	**6800**
Average hourly consumption (Kwh)	0	0	248	0	35	**283**
Progressive (Kw) as of 03/18/2022	0	0	109380	2070	12050	**123500**

SPECIFIC CONSUMPTIONS

Specific consumption of the turbogenerators

Consumption from March 7 to 8, 2022:

	Production (KW)	Steam consumption (t/h)	Progress of VHP consumption (tons)	Specific consumption (kg steam/KW)
TG I	846	19.2	3081	22.71
TG II	893	5.3	897	5.97

Consumption from March 8 to 9, 2022:

	Production (KW)	Steam consumption (t/h)	Progress of VHP consumption (tons)	Specific consumption (kg steam/KW)
TG I	866	19.3	3544	22.27
TG II	869	5.3	1024	6.09

Consumption from March 9 to 10, 2022:

	Production (KW)	Steam consumption (t/h)	Progress of VHP consumption (tons)	Specific consumption (kg steam/KW)
TG I	909	19.3	4088	21.27
TG II	836	5.2	1148	6.18

Consumption from March 10 to 11, 2022:

	Production (KW)	Steam consumption (t/h)	Progress of VHP consumption (tons)	Specific consumption (kg steam/KW)
TG I	971	19.8	4483	**20.38**
TG II	824	4.8	1263	**5.81**

Consumption from March 11 to 14, 2022:

	Production (KW)	Steam consumption (t/h)	Progress of VHP consumption (tons)	Specific consumption (kg steam/KW)
TG I	938	20.2	5936	2054
TG II	790	4.9	1618	6.24

Consumption from March 14 to 15, 2022:

	Production (KW)	Steam consumption (t/h)	Progress of VHP consumption (tons)	Specific consumption (kg steam/KW)
TG I	987	20.4	6426	20.68
TG II	791	4.9	1735	6.16

Consumption from March 15 to 16, 2022:

	Production (KW)	Steam consumption (t/h)	Progress of VHP consumption (tons)	Specific consumption (kg steam/KW)
TG I	935	19.1	6883	20.41
TG II	829	5	1855	6.03

Consumption from March 16 to 17, 2022:

	Production (KW)	Steam consumption (t/h)	Progress of VHP consumption (tons)	Specific consumption (kg steam/KW)
TG I	930	18.9	7337	20.35
TG II	848	5.1	1977	6

Consumption from March 16 to 17, 2022:

	Production (KW)	Steam consumption (t/h)	Progress of VHP consumption (tons)	Specific consumption (kg steam/KW)
TG I	930	18.9	7337	20.35
TG II	848	5.1	1977	6

Consumption from March 17 to 18, 2022:

	Production (KW)	Steam consumption (t/h)	Progress of VHP consumption (tons)	Specific consumption (kg steam/KW)
TG I	953	19.5	7805	**20.46**
TG II	843	5	2096	**5.88**

Specific consumption of boilers

Consumption from March 7 to 8, 2022:

	Steam produced (t/h)	Fuel Oil consumes(t/h)	Fuel Gas consumed (Nm3/h)	Fuel Gas consumed (t/h)	Specific consumption (Toe*10-3/ton of steam)
CH 101	15.3	0.637	568	0.341	70.36

	Steam produced (t/h)	Fuel Oil consumed (t/h)	Fuel Gas consumed (Nm3/h)	Fuel Gas consumed (t/h)	Specific consumption (Toe*10-3/ton of steam)
CH202	11.4	0.796	*	*	70.32

Consumption from March 8 to 9, 2022:

	Steam produced (t/h)	Fuel Oil consumes (t/h)	Fuel Gas consumed (Nm3/h)	Fuel Gas consumed (t/h)	Specific consumption (Toe*10-3/ton of steam)
CH 101	13.6	0.624	464	0.278	72.56

	Steam produced (t/h)	Fuel Oil consumed (t/h)	Fuel Gas consumed (Nm3/h)	Fuel Gas consumed (t/h)	Specific consumption (Toe*10-3/ton of steam)
CH202	13, 2	0.950	*	*	72.53

Consumption from March 9 to 10, 2022 :

CH 101	Steam produced (t/h)	Fuel Oil consumes(t/h)	Fuel Gas consumed (Nm3/h)	Fuel Gas consumed (t/h)	Specific consumption (Toe*10-3/ton of steam)
	13	0.591	418	0.237	69.68

CH202	Steam produced (t/h)	Fuel Oil consumed (t/h)	Fuel Gas consumed (Nm3/h)	Fuel Gas consumed (t/h)	Specific consumption (Toe*10-3/ton of steam)
	13.9	0.993	*	*	72.27

Consumption from March 10 to 11, 2022 :

CH 101	Steam produced (t/h)	Fuel Oil consumes(t/h)	Fuel Gas consumed (Nm3/h)	Fuel Gas consumed (t/h)	Specific consumption (Toe*10-3/ton of steam)
	13.6	0.614	468	0.266	70.92

CH202	Steam produced (t/h)	Fuel Oil consumed (t/h)	Fuel Gas consumed (Nm3/h)	Fuel Gas consumed (t/h)	Specific consumption (Toe*10-3/ton of steam)
	13.2	0.926	*	*	70.76

Consumption from March 11 to 14, 2022:

CH 101	Steam produced (t/h)	Fuel Oil consumes(t/h)	Fuel Gas consumed (Nm3/h)	Fuel Gas consumed (t/h)	Specific consumption (Toe*10-3/ton of steam)
	14.3	0.616	534	0.303	70.88

CH202	Steam produced (t/h)	Fuel Oil consumed (t/h)	Fuel Gas consumed (Nm3/h)	Fuel Gas consumed (t/h)	Specific consumption (Toe*10-3/ton of steam)
	13	0.917	*	*	**70.88**

Consumption from March 14 to 15, 2022 :

CH 101	Steam produced (t/h)	Fuel Oil consumes(t/h)	Fuel Gas consumed (Nm3/h)	Fuel Gas consumed (t/h)	Specific consumption (Toe*10-3/ton of steam)
	14	0.6	**477**	**0.295**	**70.22**

CH202	Steam produced (t/h)	Fuel Oil consumed (t/h)	Fuel Gas consumed (Nm3/h)	Fuel Gas consumed (t/h)	Specific consumption (Toe*10-3/ton of steam)
	13.8	0.957	*	*	**70.19**

Consumption from March 15 to 16, 2022 :

CH 101	Steam produced (t/h)	Fuel Oil consumes(t/h)	Fuel Gas consumed (Nm3/h)	Fuel Gas consumed (t/h)	Specific consumption (Toe*10-3/ton of steam)
	15	0.604	57	0.375	70.66

CH202	Steam produced (t/h)	Fuel Oil consumed (t/h)	Fuel Gas consumed (Nm3/h)	Fuel Gas consumed (t/h)	Specific consumption (Toe*10-3/ton of steam)
	11.5	0.809	*	*	71.21

Consumption from March 16 to 17, 2022:

CH 101	Steam produced (t/h)	Fuel Oil consumes(t/h)	Fuel Gas consumed (Nm3/h)	Fuel Gas consumed (t/h)	Specific consumption (Toe*10-3/ton of steam)
	15.6	0.548	628	0.439	70.22

CH202	Steam produced (t/h)	Fuel Oil consumed (t/h)	Fuel Gas consumed (Nm3/h)	Fuel Gas consumed (t/h)	Specific consumption (Toe*10-3/ton of steam)
	10.8	0.763	*	*	71.40

Consumption from March 17 to 18, 2022 :

CH 101	Steam produced (t/h)	Fuel Oil consumes(t/h)	Fuel Gas consumed (Nm3/h)	Fuel Gas consumed (t/h)	Specific consumption (Toe*10-3/ton of steam)
	15.5	0.544	636	0.444	70.95

CH202	Steam produced (t/h)	Fuel Oil consumed (t/h)	Fuel Gas consumed (Nm3/h)	Fuel Gas consumed (t/h)	Specific consumption (Toe*10-3/ton of steam)
	11.2	0.788	*	*	71.11

Steam Balances

Steam report from March 7 to 8, 2022:

VHP							
	Production		Consumption				
	CH101	CH202	TG I	TG II	SR VHP-VMP	02 TK1	EMI Station
Mass flow (kg/h)	15300	11400	19200	5300	200	2000	0
Temperature (°C)	440	440	440	440	440	440	0
Pressure (Bar)	40	40	40	40	40	40	0
Enthalpy (kcal/kg)	789	789	789	789	789	789	0
Energy flow (kcal/h)	12071700	8994600	15148800	4181700	157800	1578000	0

VMP							
	Production			Consumption			
	TGI	SR VHP-VMP	RC boiler	SR VMP-VBP	CTE	Topping	R.C.
Mass flow (kg/h)	19200	200	1500	4300	8000	4500	4000
Temperature (°C)	260	260	260	260	260	260	260
Pressure (Bar)	11	11	11	11	11	11	11
Enthalpy (Kcal/Kg)	707	707	707	707	707	707	707
Energy flow (kcal/h)	13574400	141400	1060500	3040100	5656000	3181500	2828000

VBP								
	Production			Consumption				
	SR VMP-VBP	Turbine topping	RC turbine	CTE	CDM	Topping+ Chemical treatment	R.C.	Condensation
Mass flow (kg/h)	4300	0	1000	600	2000	1000	500	1200
Temperature (°C)	200	0	200	200	200	200	200	200
Pressure (Bar)	3	0	3	3	3	3	3	3
Enthalpy (kcal/kg)	684	0	684	684	684	684	684	684
Energy flow (kcal/h)	2941200	0	684000	410400	1368000	684000	342000	820800

Steam report from March 8 to 9, 2022:

VHP							
	Production		Consumption				
	CH101	CH202	TG I	TG II	SR VHP-VMP	02 TK1	EMI Station
Mass flow (kg/h)	13600	13200	19300	5300	200	2000	0
Temperature (°C)	440	440	440	440	440	440	0
Pressure (Bar)	40	40	40	40	40	40	0
Enthalpy (kcal/kg)	789	789	789	789	789	789	0
Energy flow (kcal/h)	10730400	10414800	15227700	4181700	157800	1578000	0

VMP							
	Production			Consumption			
	TGI	SR VHP-VMP	RC boiler	SR VMP-VBP	CTE	Topping	R.C.
Mass flow (kg/h)	19300	300	1500	4600	8000	4500	4000
Temperature (°C)	260	260	260	260	260	260	260
Pressure (Bar)	11	11	11	11	11	11	11
Enthalpy (kcal/kg)	707	707	707	707	707	707	707
Energy flow (kcal/h)	13645100	212100	1060500	3252200	5656000	3181500	2828000

VBP								
	Production				Consumption			
	SR VMP-VBP	Turbine Topping	RC turbine	CTE	CDM	Topping + chemical treatment	R.C.	Condensation
Mass flow (kg/h)	4500	0	1000	600	2000	1000	500	1400
Temperature (°C)	200	0	200	200	200	200	200	200
Pressure (Bar)	3	0	3	3	3	3	3	3
Enthalpy (kcal/kg)	684	0	684	684	684	684	684	684
Energy flow (kcal/h)	3078000	0	684000	410400	1368000	684000	342000	957600

Steam report from March 9 to 10, 2022:

VHP							
	Production		Consumption				
	CH101	CH202	TG I	TG II	SR VHP-VMP	02 TK1	EMI Station
Mass flow (kg/h)	13000	13900	19300	5200	300	2000	0
Temperature (°C)	440	440	440	440	440	440	0
Pressure (Bar)	40	40	40	40	40	40	0
Enthalpy (kcal/kg)	789	789	789	789	789	789	0
Energy flow (kcal/h)	10257000	10967100	15227700	4102800	236700	1578000	0

VMP							
	Production			Consumption			
	TGI	SR VHP-VMP	RC boiler	SR VMP-VBP	CTE	Topping	R.C.
Mass flow (kg/h)	19300	300	1500	4600	8000	4500	4000
Temperature (°C)	260	260	260	260	260	260	260
Pressure (Bar)	11	11	11	11	11	11	11
Enthalpy (kcal/kg)	707	707	707	707	707	707	707
Energy flow (kcal/h)	13645100	212100	1060500	3252200	5656000	3181500	2828000

VBP								
	Production				Consumption			
	SR VMP-VBP	Turbines topping	RC turbine	CTE	CDM	Topping + chemical treatment	R.C.	Condensation
Mass flow (kg/h)	4600	0	1000	600	2000	1000	500	1500
Temperature (°C)	200	0	200	200	200	200	200	200
Pressure (Bar)	3	0	3	3	3	3	3	3
Enthalpy (kcal/kg)	684	0	684	684	684	684	684	684
Energy flow (kcal/h)	3146400	0	684000	410400	1368000	684000	342000	1026000

Steam report from March 10 to 11, 2022:

VHP							
	Production		Consumption				
	CH101	CH202	TG I	TG II	SR VHP-VMP	02 TK1	EMI Station
Mass flow (kg/h)	326000	317000	475000	115000	5000	48000	0
Temperature (°C)	440	440	440	440	440	440	0
Pressure (Bar)	40	40	40	40	40	40	0
Enthalpy (kcal/kg)	789	789	789	789	789	789	0
Energy flow (kcal/h)	257214000	250113000	374775000	90735000	3945000	37872000	0

VMP							
	Production			Consumption			
	TGI	SR VHP-VMP	RC boiler	SR VMP-VBP	CTE	Topping	R.C.
Mass flow (kg/h)	475000	5000	36000	120000	192000	108000	360000
Temperature (°C)	260	260	260	260	260	260	260
Pressure (Bar)	11	11	11	11	11	11	11
Enthalpy (Kcal/Kg)	707	707	707	707	707	707	707
Energy flow (kcal/h)	335825000	3535000	25452000	84840000	135744000	76356000	254520000

VBP								
	Production			Consumption				
	SR VMP-VBP	Turbine topping	RC turbine	CTE	CDM	Topping+ Chemical treatment	R.C.	Condensation
Mass flow (kg/h)	120000	0	24000	12000	480000	36000	12000	36000
Temperature (°C)	200	0	200	200	200	200	200	200
Pressure (Bar)	3	0	3	3	3	3	3	3
Enthalpy (kcal/kg)	684	0	684	684	684	684	684	684
Energy flow (kcal/h)	82080000	0	16416000	8208000	328320000	24624000	8208000	24624000

Steam report from March 11 to 14, 2022:

VHP							
	Production		Consumption				
	CH101	CH202	TG I	TG II	SR VHP-VMP	02 TK1	EMI Station
Mass flow (kg/h)	14300	13000	20200	4900	300	2000	0
Temperature (°C)	440	440	440	440	440	440	0
Pressure (Bar)	40	40	40	40	40	40	0
Enthalpy (kcal/kg)	789	789	789	789	789	789	0
Energy flow (kcal/h)	11282700	10257000	15937800	3866100	236700	1578000	0

VMP							
	Production			Consumption			
	TGI	SR VHP-VMP	RC boiler	SR VMP-VBP	CTE	Topping	R.C.
Mass flow (kg/h)	20200	300	1500	5400	8000	4500	4000
Temperature (°C)	260	260	260	260	260	260	260
Pressure (Bar)	11	11	11	11	11	11	11
Enthalpy (kcal/kg)	707	707	707	707	707	707	707
Energy flow (kcal/h)	14281400	212100	1060500	3817800	5656000	3181500	2828000

VBP								
	Production			Consumption				
	SR VMP-VBP	Turbine topping	RC turbine	CTE	CDM	Topping + chemical treatment	R.C.	Condensation
Mass flow (kg/h)	5400	0	1000	500	2000	2000	500	1400
Temperature (°C)	200	0	200	200	200	200	200	200
Pressure (Bar)	3	0	3	3	3	3	3	3
Enthalpy (kcal/kg)	684	0	684	684	684	684	684	684
Energy flow (kcal/h)	3693600	0	684000	342000	1368000	1368000	342000	957600

Steam report from March 14 to 15, 2022:

VHP							
	Production		Consumption				
	CH101	CH202	TG I	TG II	SR VHP-VMP	02 TK1	EMI Station
Mass flow (kg/h)	14000	13800	20400	4900	400	2000	0
Temperature (°C)	440	440	440	440	440	440	0
Pressure (Bar)	40	40	40	40	40	40	0
Enthalpy (kcal/kg)	789	789	789	789	789	789	0
Energy flow (kcal/h)	11046000	10888200	16095600	3866100	315600	1578000	0

VMP							
	Production			Consumption			
	TGI	SR VHP-VMP	RC boiler	SR VMP-VBP	CTE	Topping	R.C.
Mass flow (kg/h)	20400	400	1500	5800	8000	4500	4000
Temperature (°C)	260	260	260	260	260	260	260
Pressure (Bar)	11	11	11	11	11	11	11
Enthalpy (kcal/kg)	707	707	707	707	707	707	707
Energy flow (kcal/h)	14422800	282800	1060500	4100600	5656000	3181500	2828000

VBP								
	Production			Consumption				
	SR VMP-VBP	Turbine topping	RC turbine	CTE	CDM	Topping + Chemical treatment	R.C.	Condensation
Mass flow (kg/h)	5800	0	1000	500	2500	2000	500	1300
Temperature (°C)	200	0	200	200	200	200	200	200
Pressure (Bar)	3	0	3	3	3	3	3	3
Enthalpy (kcal/kg)	684	0	684	684	684	684	684	684
Energy flow (kcal/h)	3967200	0	684000	342000	1710000	1368000	342000	889200

Steam report from March 15 to 16, 2022:

VHP							
	Production		Consumption				
	CH101	CH202	TG I	TG II	SR VHP-VMP	02 TK1	EMI Station
Mass flow (kg/h)	15000	11500	19100	5000	400	2000	0
Temperature (°C)	440	440	440	440	440	440	0
Pressure (Bar)	40	40	40	40	40	40	0
Enthalpy (kcal/kg)	789	789	789	789	789	789	0
Energy flow (kcal/h)	11835000	9073500	15069900	3945000	315600	1578000	0

VMP							
	Production			Consumption			
	TGI	SR VHP-VMP	RC boiler	SR VMP-VBP	CTE	Topping	R.C.
Mass flow (kg/h)	19100	400	1500	4500	8000	4500	4000
Temperature (°C)	260	260	260	260	260	260	260
Pressure (Bar)	11	11	11	11	11	11	11
Enthalpy (kcal/kg)	707	707	707	707	707	707	707
Energy flow (kcal/h)	13503700	282800	1060500	3181500	5656000	3181500	2828000

VBP								
	Production			Consumption				
	SR VMP-VBP	Turbine topping	RC turbine	CTE	CDM	Topping + chemical treatment	R.C.	Condensation
Mass flow (kg/h)	4500	0	1000	500	2000	2000	500	400
Temperature (°C)	200	0	200	200	200	200	200	200
Pressure (Bar)	3	0	3	3	3	3	3	3
Enthalpy (kcal/kg)	684	0	684	684	684	684	684	684
Energy flow (kcal/h)	3078000	0	684000	342000	1368000	1368000	342000	273600

Steam report from March 16 to 17, 2022:

VHP							
	Production		Consumption				
	CH101	CH202	TG I	TG II	SR VHP-VMP	02 TK1	EMI Station
Mass flow (kg/h)	15600	10800	18900	5100	400	2000	0
Temperature (°C)	440	440	440	440	440	440	0
Pressure (Bar)	40	40	40	40	40	40	0
Enthalpy (kcal/kg)	789	789	789	789	789	789	0
Energy flow (kcal/h)	12308400	8521200	14912100	4023900	315600	1578000	0

VMP							
	Production			Consumption			
	TGI	SR VHP-VMP	RC boiler	SR VMP-VBP	CTE	Topping	R.C.
Mass flow (kg/h)	18900	400	1500	4300	8000	4500	4000
Temperature (°C)	260	260	260	260	260	260	260
Pressure (Bar)	11	11	11	11	11	11	11
Enthalpy (kcal/kg)	707	707	707	707	707	707	707
Energy flow (kcal/h)	13362300	282800	1060500	3040100	5656000	3181500	2828000

VBP								
	Production			Consumption				
	SR VMP-VBP	Turbine topping	RC turbine	CTE	CDM	Topping + chemical treatment	R.C.	Condensation
Mass flow (kg/h)	4300	0	1000	500	2000	2000	500	300
Temperature (°C)	200	0	200	200	200	200	200	200
Pressure (Bar)	3	0	3	3	3	3	3	3
Enthalpy (kcal/kg)	684	0	684	684	684	684	684	684
Energy flow (kcal/h)	2941200	0	684000	342000	1368000	1368000	342000	205200

Steam report March 17 to 18, 2022:

VHP							
	Production		Consumption				
	CH101	CH202	TG I	TG II	SR VHP-VMP	02 TK1	EMI Station
Mass flow (kg/h)	15500	11166.66667	19500	4958.333333	208.3333333	48000	0
Temperature (°C)	440	440	440	440	440	440	0
Pressure (Bar)	40	40	40	40	40	40	0
Enthalpy (kcal/kg)	789	789	789	789	789	789	0
Energy flow (kcal/h)	12229500	8810500	15385500	3912125	164375	37872000	0

VMP							
	Production			Consumption			
	TGI	SR VHP-VMP	RC boiler	SR VMP-VBP	CTE	Topping	R.C.
Mass flow (kg/h)	19500	208.3333333	1500	4666.666667	8000	4500	4000
Temperature (°C)	260	260	260	260	260	260	260
Pressure (Bar)	11	11	11	11	11	11	11
Enthalpy (kcal/kg)	707	707	707	707	707	707	707
Energy flow (kcal/h)	13786500	147291.6667	1060500	3299333,333	5656000	3181500	2828000

VBP								
	Production				Consumption			
	SR VMP-VBP	Turbine Topping	RC turbine	CTE	CDM	Topping + chemical treatment	R.C.	Condensation
Mass flow (kg/h)	4666.666667	0	1000	500	2000	2000	500	583.3333333
Temperature (°C)	200	0	200	200	200	200	200	200
Pressure (Bar)	3	0	3	3	3	3	3	3
Enthalpy (kcal/kg)	684	0	684	684	684	684	684	684
Energy flow (kcal/h)	3192000	0	684000	342000	1368000	1368000	342000	399000